Using Data and AI in medical education

Tim Shaw

Professor of Digital Health

University of Sydney

Director of Research and Capacity Building
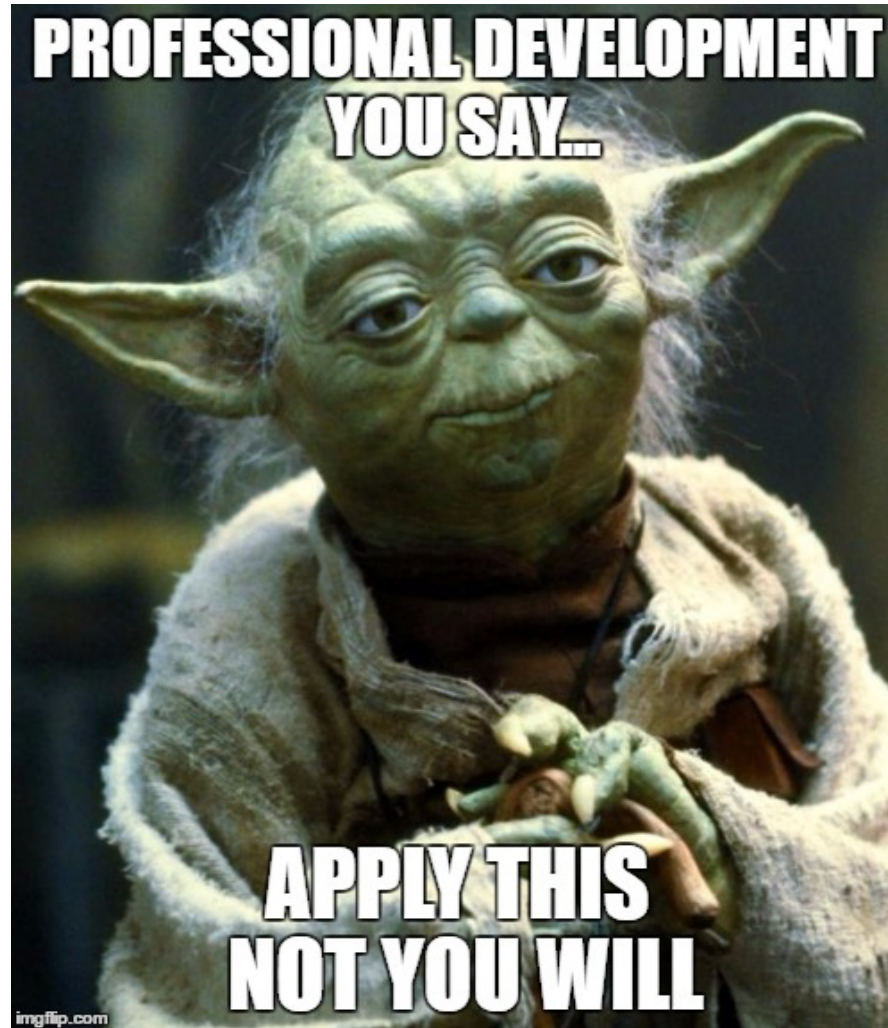
Digital Health CRC

Today

- What is the challenge?
- Practice analytics
- Impact of AI on Education and assessment
- Digital Health CRC

What is AI?

Its all about the data…….

Professional development as it stands not terribly effective
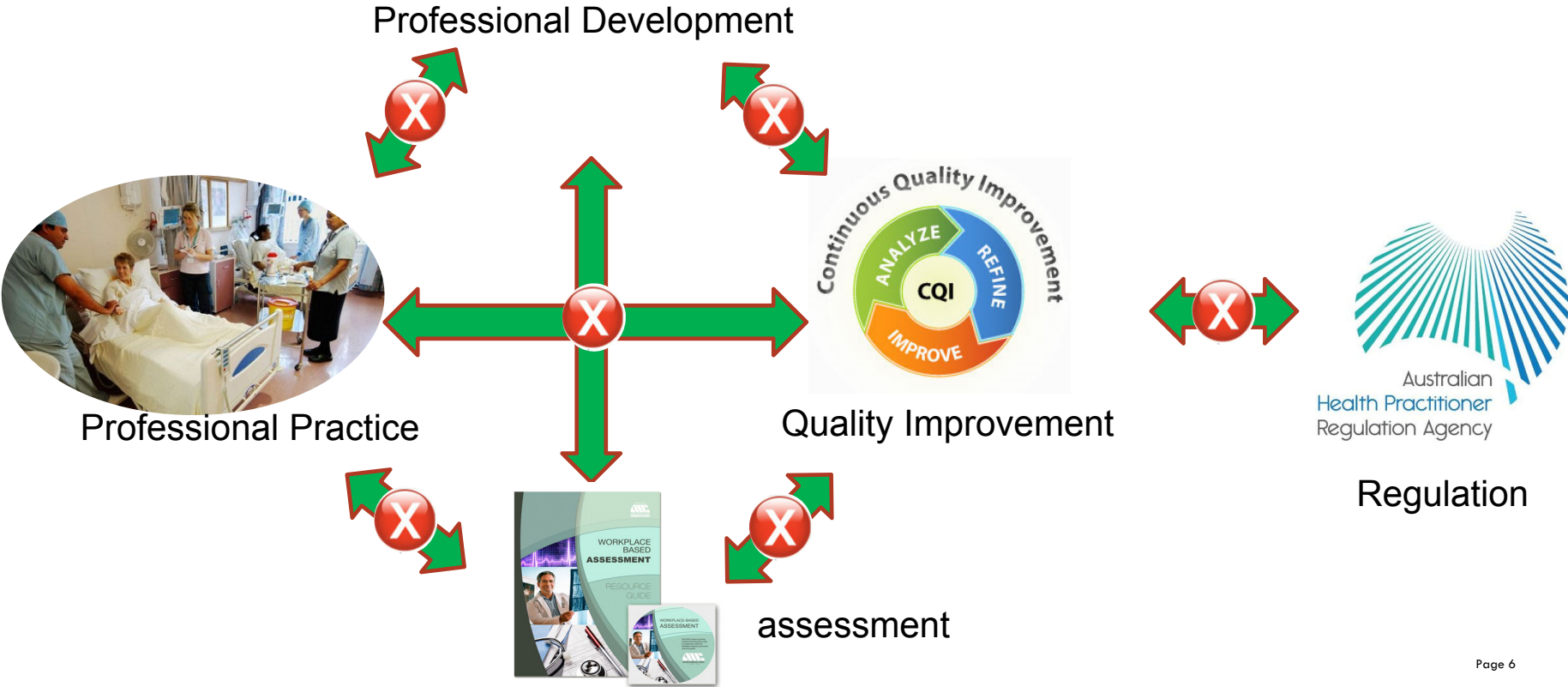
Online learning growing

Key challenges – education divorced from practice and QI?

Professional Development

Professional Practice

Quality Improvement

Regulation

assessment

Key challenges – education divorced from practice and QI?

Professional Development

Practice and performance Data

Professional Practice

Quality Improvement

Regulation

assessment

Practice Analytics

Using real time performance data and analytics to drive personalized education and performance improvement

How do clinicians feel about their data being used?

9 focus groups held with mixed teams

Major themes:

- Enthusiasm for feeding back clinical data

- Formative, not punitive, usage

- Desire for peer comparison, benchmarking and collaborative learning

- Data access and usage challenges

- Challenge with capturing complex clinical narratives

Shaw, T.J. et al, Health professionals' attitudes towards the feedback of routinely collected clinical data for performance feedback and personalised professional development. *MJA in press*

"….honestly, I think this (reviewing my performance data) is something I would drop everything to do. Otherwise how on earth would I know what I am doing is right?" (Oncology fellow)

"…..If there is a hint of a policeman in the room I will only do the minimum required….." (Emergency resident)
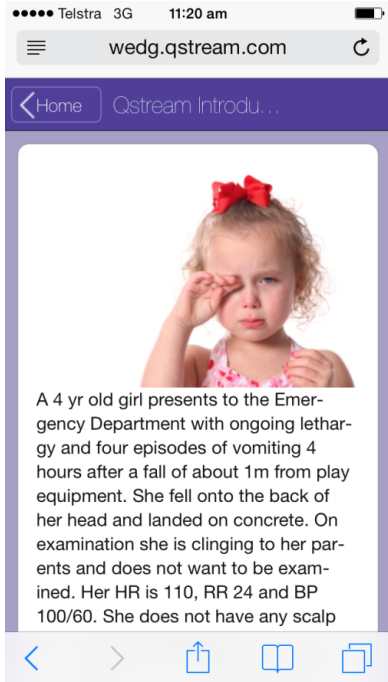
Building a program of research

How do we couple clinicians performance data with their education?

How do we use micro-learning platforms to deliver timely co-face education?

What is the role of AI?

Sydney HealthPartners

Translating Research into Better Health Outcomes

Case-based micro-learning – a new delivery technology

Linking Cases to data - Turning point – Partners Healthcare

10 -12 cases sent to 600 nurses in enrolled hospital over a 3 month period.

1) Cases responding to trends in organisational adverse event data/QI programs

1-2 cases sent per week for 3 months

2) Cases responding to National Data such as NPSGs or National S & Q Health Service Standards
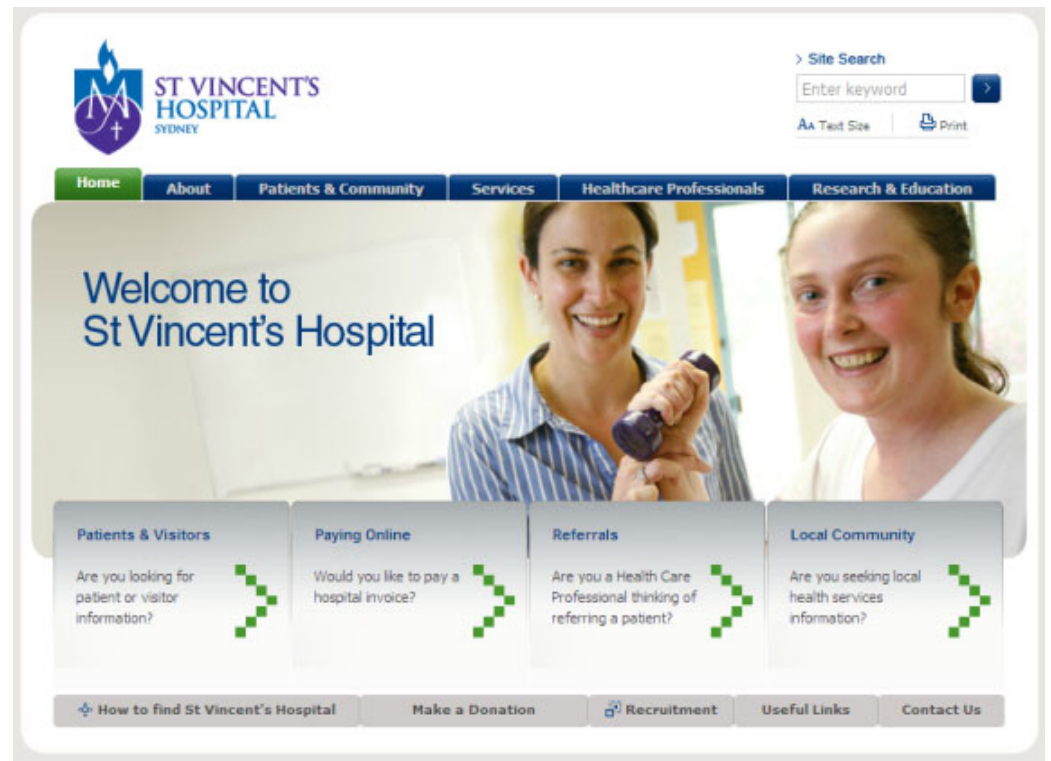
'Most talked about educational activity in memory of hospital leaders' Brigham and Women's Faulkner
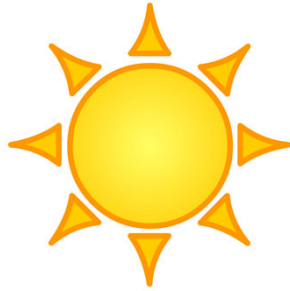
Self reported pain scores

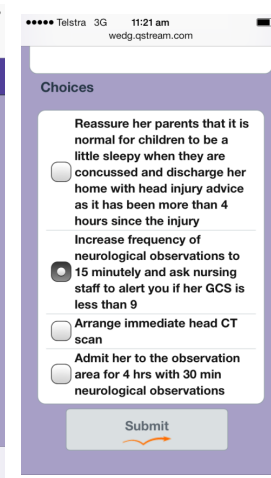Mixed method, quasi randomised study on self reported pain scores at Sacred heart hospital
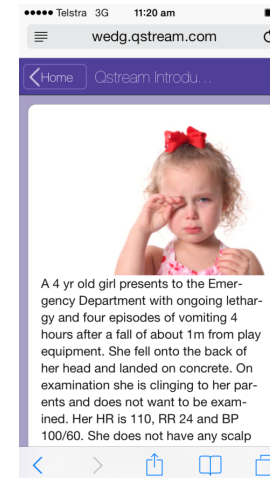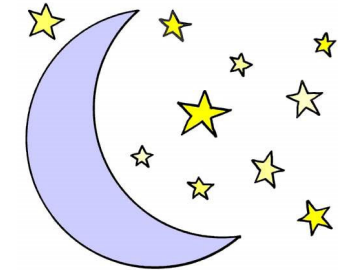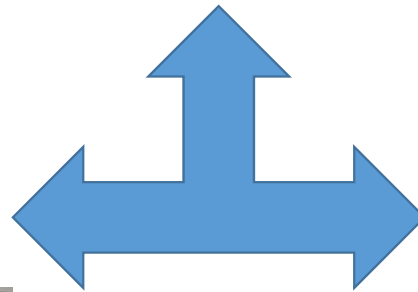
- Used Qstream and audit and feedback

- Improvement in pain management– 95% vs 22% for recording pain management.
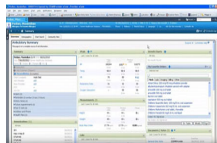- 1.8 point improvement in pain scores

Moving down to the
individual level
Turning point 2

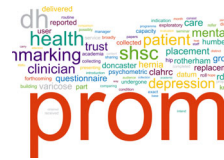# Practice analytics – a vision?

EMR   MBS/NPS etc   Registries   PROMs/PREMs   Claims data   Assessment   Complaints/regulatory data
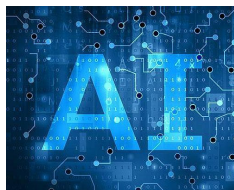
Analyse and understand practice and performance of teams and individuals

Continuous Quality Improvement
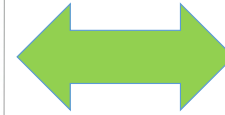
Personalised, information driven High Impact Learning at coal face

Professional Performance Framework
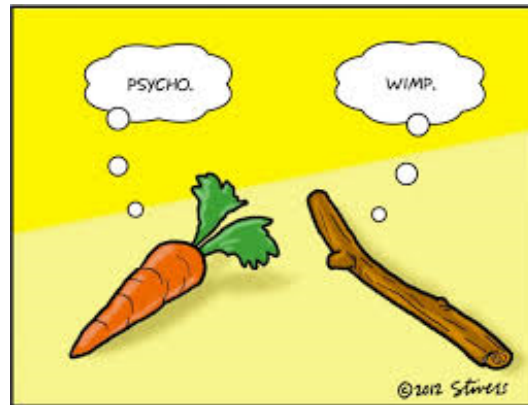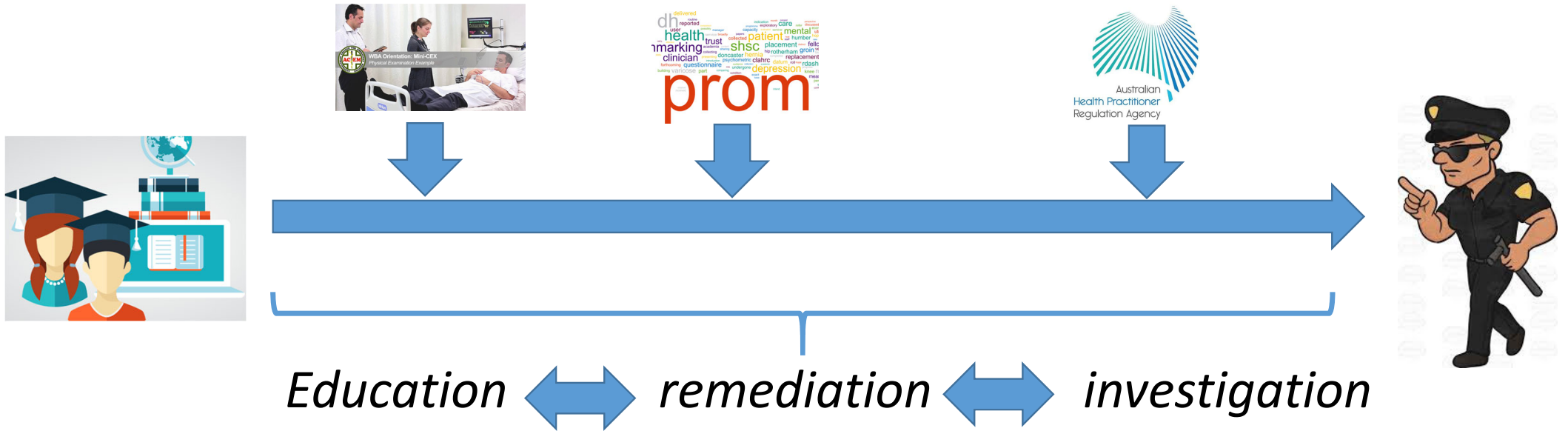
Some key challenges - Practice vaults

A key challenge

Performance improvement Vs Performance management

Education ⟷ remediation ⟷ investigation

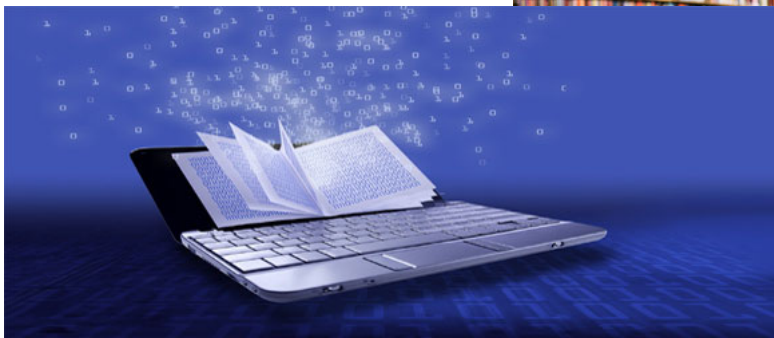# Where will AI have impact?

Automation of some processes

Grading Mini CEX and other assessment items

Access to new information in rapid time

NATURAL LANGUAGE PROCESSING

Mini-Clinical Evaluation Exercise (CEX)

Where will AI have impact?

Analysing performance for assessment feedback

- Eg Robotic Surgery
- Google glasses
- Alexa

- Pick individuals at risk early
- Risk adjust performance
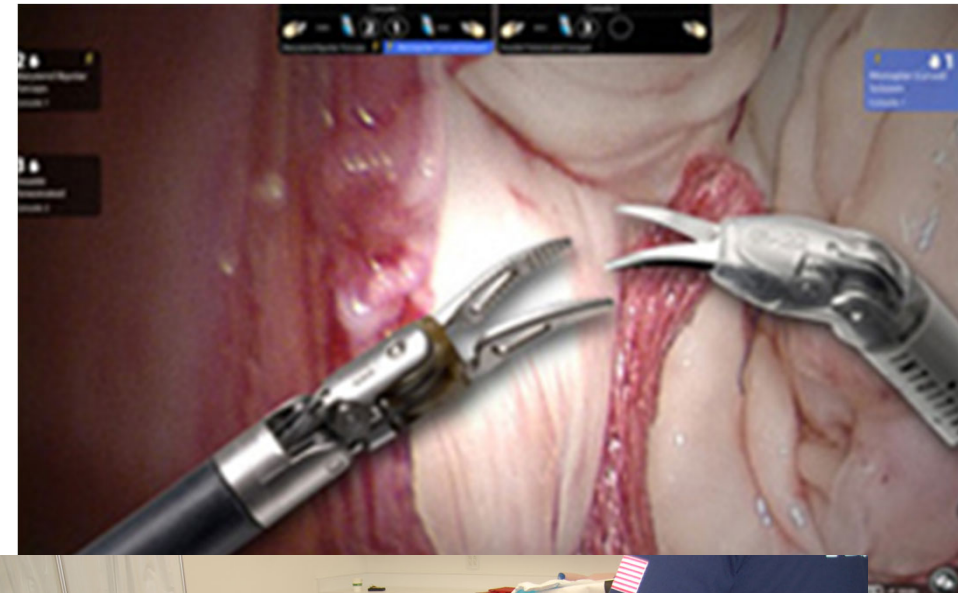
Where will AI have impact?

Intelligent Tutors?

Automating feedback against set rules

More intelligent feedback systems
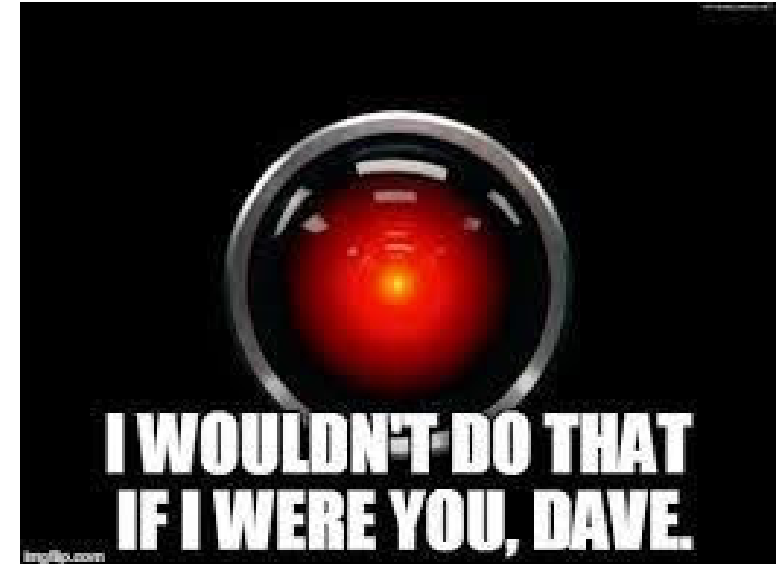
Where will AI have impact?

Constant companion along professional journey

My CPD Home
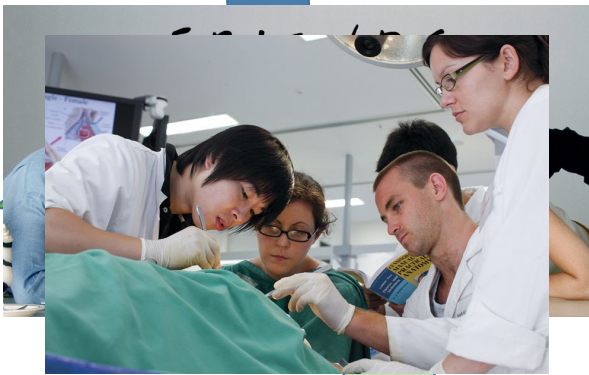
Education Recommender System based on performance, practice and stage of career

Galvanising our
Digital Health Sector

Partners Span the Health and Wellness landscape

11 Public & Private Health Service Providers

12 Policy, Funding & Regulation

05 Private Health Service Providers

04 Insurers & Networks

Consumer

05 Aged Care and Disability Providers and Networks

21 Established or Early-Stage Tech Companies

16 Universities

02 Medical Product Companies

$110M cash $120M in Kind

P&A Flagship Program in Understanding Clinical Practice

Develop tools to enable risk-adjusted performance benchmarking

Develop tools to support informed referrals for clinicians

Create data-driven systems linking practice with performance improvement for teams and individuals

Measure variation and benchmark performance

➢ How do we capture and collate data for performance analytics?
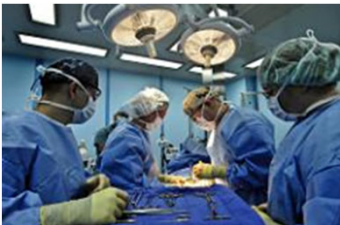
➢ How do we risk adjust for meaningful comparison?

➢ How do assign responsibility of care to teams and individuals?

➢ How do we measure quality of practice?

Use transparency of data to optimise performance and choice

➢ How do we use performance and other data sets to improve referral choices for clinicians and consumers?

➢ How do we link practice data with professional development and performance improvement?

➢ How do we leverage performance data to support point-of-care decision making?

➢ How do we support organisations to use data to improve performance and efficiency?

➢ How do we optimise payment and claims management?

Build a platform for payers and providers to optimise claim management

Understand clinical variation and apply this knowledge to improve performance and move toward a learning health system

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SYDNEY

NSW
GOVERNMENT | Health

EHEALTH CAPABILITY FRAMEWORK

Foundation Level for all Clinical Health Professionals

Join us....

Inaugural Practice Analytics Workshop
10 April 2019, 10-4pm
Assembly Room C - 1W24, West Lobby,
Partners HealthCare,|
Assembly Row,
399 Revolution Drive, Somerville, MA 02145

Aim: To scope how we harness growing interest in Practice Analytics – the use of performance data in professional development and practice improvement.

Learning Analytics 3.0
Bending the curve pre-conference workshop 25 Sept 2019

ICRE 2019

September 26-28, 2019, Ottawa, Canada

Tim.shaw@Sydney.edu.au